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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,860	10/16/2003	Jong-Kwon Kim	5000-1-464	1722

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EXAMINER	
TRAN, DZUNG D	
ART UNIT	PAPER NUMBER
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,860	KIM ET AL.	
	Examiner	Art Unit	
	Dzung D. Tran	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-11 and 13-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-11 and 13-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen US Publication no. 2003/0175030 in view of Zhao U.S. Publication no. 2004/0208580.

Regarding claim 1, Chen discloses in Figure 3, an optical add/drop multiplexer for adding or dropping a channel to an

optical signal, comprising:

a wavelength-division multiplexer 34 to receive and transmit an optical signal, and

a plurality of demultiplexing ports (.g., ports of demultiplexer 32), each demultiplexing port is a path for a demultiplexed channel of the optical signal;. and

a plurality of add/drop multiplexers 36, wherein respective add/drop multiplexers 36 are connected to respective demultiplexing ports.

Figure 3 of Chen does not discloses each of the add/drop multiplexers 36 having a reflector for transmitting or reflecting an input channel, wherein each add/drop

multiplexers is configured to add and/or drop a channel to/from from the wavelength-division multiplexer using the reflector.

Zhao discloses in Figure 1, an add/drop multiplexers 800 having a wavelength independent reflector 20 for transmitting or reflecting an input channel (page 3, paragraph 0029-0030), wherein each add/drop multiplexers is configured to add and/or drop a channel to/from from the wavelength-division multiplexer using the reflector (page 3, paragraph 0029-0030).

At the time of the invention was made, one of ordinary skill in the art would have been obvious to replace the add/drop multiplexers 36 that uses opto-mechanical 2x2 switch of Figure 3 with the add/drop multiplexer that uses fiber Bragg grating (same as reflector) of Zhao in the apparatus of Figure 3 of Chen. One of ordinary skill in the art would have been motivated to do that in order to provide an add/drop multiplexer which operates independently of the wavelength by using fiber Bragg grating as the reflector.

Regarding claim 2, Chen discloses in Figure 3, wherein the wavelength-division multiplexer is connected to an optical fiber to receive an multiplexed optical signal, and has input and output ports as a path for the multiplexed optical signal.

Regarding claim 3, Zhao discloses in Figure 1, wherein each of the plurality of add/drop multiplexers has a plurality of ports for outputting an input channel to an adjacent lower port.

Regarding claim 4, Chen discloses in Figure 3, wherein the optical add/drop multiplexer is connected to an optical fiber on which the multiplexed optical signal is transmitted.

Regarding claim 5, Zhao discloses in Figure 1, wherein each of the add/drop multiplexers drops a channel by outputting the channel received through a third port connected to the wavelength-division multiplexer to a fourth port and outputting the channel received through the fourth channel to a fifth channel by the reflector, and adds a channel by outputting the channel received through a first port to a second port and outputting the channel received through the second port to a third port by the reflector.

Regarding claim 7, Chen discloses in Figure 3, an optical add/drop multiplexer for adding and/or dropping a channel to an optical signal, comprising:

a first wavelength-division multiplexer 32 for wavelength-division demultiplexing a received optical signal and providing respective demultiplexed channels to respective demultiplexing ports, each demultiplexing port corresponding to the wavelength of the demultiplexed channel;

a plurality of add/drop multiplexers 36, wherein respective add/drop multiplexers are connected to respective demultiplexing ports;

a second wavelength-division multiplexer 34 for wavelength-division multiplexing a plurality of received channels, the second wavelength-division multiplexer having a plurality of demultiplexing ports, wherein respective demultiplexing ports are connected to respective add/drop multiplexers 36.

Figure 3 of Chen does not discloses each of the add/drop multiplexers 36 having first and second circulators and a reflector connected between the first and second circulators, for transmitting or reflecting an input channel and wherein each add/drop

multiplexer is configured to add and/or drop a channel to/from from the wavelength-division multiplexer using the first and second circulators and reflector.

Zhao discloses in Figure 1, each of the add/drop multiplexers having first and second circulators 10, 30 respectively and a wavelength independent reflector 20 connected between the first and second circulators 10, 30, for transmitting or reflecting an input channel (page 3, paragraph 0029-0030), and wherein each add/drop multiplexer is configured to add and/or drop a channel to/from from the wavelength-division multiplexer using the first and second circulators 10, 30 and reflector 20.

At the time of the invention was made, one of ordinary skill in the art would have been obvious to replace the add/drop multiplexers 36 that uses opto-mechanical 2x2 switch of Figure 3 with the add/drop multiplexer of Zhao that uses fiber Bragg grating (same as reflector) in the apparatus of Figure 3 of Chen. One of ordinary skill in the art would have been motivated to do that in order to provide an add/drop multiplexer which operates independently of the wavelength by using fiber Bragg grating as the reflector.

Regarding claim 8, Chen discloses in Figure 3, wherein the first wavelength-division multiplexer 32 connected to an optical fiber to receive a multiplexed optical signal.

Regarding claim 9, Zhao discloses in Figure 1, wherein each of the plurality of add/drop multiplexers has a plurality of ports for outputting an input channel to an adjacent lower port.

Regarding claim 10, Zhao discloses in Figure 1, wherein the first circulator 10 drops a channel by outputting the channel received through a first port connected to

the first wavelength-division multiplexer to a fourth port and outputting the channel received through the second channel to a third channel by the reflector 20.

Regarding claim 11, Zhao discloses in Figure 1, wherein and the second circulator 30 adds a channel by outputting the channel received through a first port to a second port and outputting the channel received through the second port to a third port connected to the second wavelength-division multiplexer by the reflector.

Regarding claim 13, Chen discloses wherein each of the first and second wavelength-division multiplexers includes an arrayed-waveguide grating (page 1, paragraph 0004).

Regarding claims 14-17, Zhao discloses in page 3, paragraph 0029-0030, FBG 20 is controlled to selectively dropped or not dropped the optical WDM signal by putting the FBG in the "all reflective" or "all pass"
state.

Response to Argument

3. Applicant's arguments filed on 12/18/2006 have been fully considered but they are not persuasive.

A. Rejection of claims 1-5, 7-11 and 13 under *USC § 103(a) as being* unpatentable over Chen US Publication no. 2003/0175030 in view of Zhao U.S. Publication no. 2004/0208580.

Applicant argues that the FBG of Zhao is a wavelength dependent reflector, not a wavelength independent reflector. However, page 3, paragraph 0029-0030 of Zhao

clearly discloses FBG 20 is controlled to selectively dropped or not dropped the optical WDM signal by putting the FBG in the "all reflective" or "all pass" state. Thus it is a wavelength independent reflector.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran
03/15/2007

Dzung Tran
DZUNG TRAN
PRIMARY PATENT EXAMINER